AN OVERVIEW OF OPEN SCIENCE TRENDS IN THE EAST ASIAN REGION

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Today's presentation is based on our personal opinions and own research conducted during the off-duty hours. The presentation does not reflect the positions and ideas of organizations we belong to. We have no conflict of interest with any private or public sectors.

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WHAT IS OPEN SCIENCE?

The concept of opening all aspects of scientific research, to allow others to freely follow the process and collaborate.

https://blog.f1000.com/2014/11/11/what-is-open-science/

For the researcher: transparency, reproducibility, dissemination, and transfer of new knowledge through open tools and workflows.

Encompasses unhindered access to scientific articles, access to data from public research, and collaborative research enabled by ICT tools and incentives.

Research data / findings produced using government funding to be made freely available to the public.

OECD (The Organization for Economic Co-operation and Development) https://www.oecd.org/sti/inno/open-science.htm

OPEN SCIENCE CONCEPTS

WHAT IS OPEN DATA?

► "Open data and content can be freely used, modified, and shared by anyone for any purpose"
https://opendefinition.org/

► Goal of open data is to make data available to anyone and reusable by anyone for further analysis
https://blog.f1000.com/2014/10/07/what-is-open-data/

https://digital.gov/2016/05/03/an-introduction-to-open-data-and-apis/

WHAT IS OPEN-SOURCE SOFTWARE?

▶ Computer software whose source code is released under a license in which the copyright holder grants users the rights to study, change, and distribute the software to anyone and for any purpose.

https://en.wikipedia.org/wiki/Open-source_software

▶ Drives innovation more quickly and gives better solutions because of community support and a broader perspective.

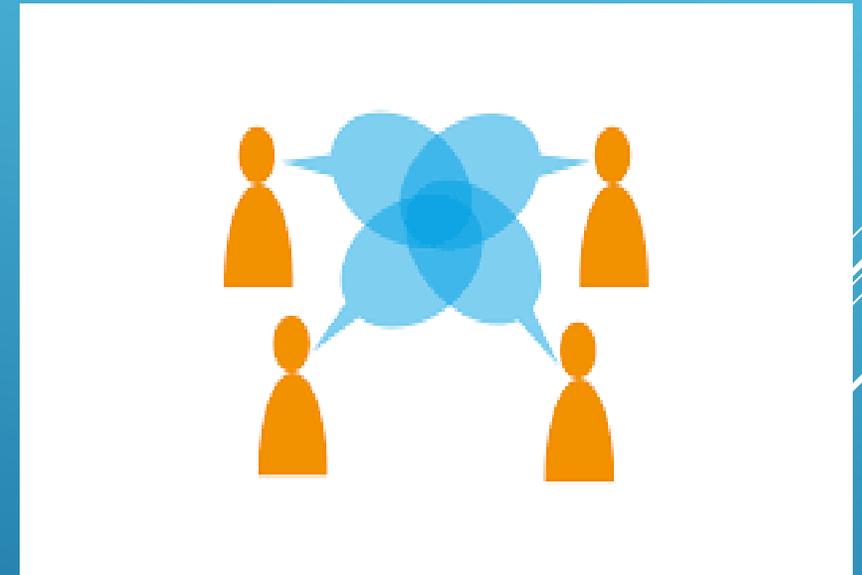https://federallabs.org/news/arl-promotes-collaboration-and-innovation-through-open-source-policy

https://www.nasa.gov/open/open-source-development.html

WHAT IS OPEN PEER-REVIEW

A move from traditional scholarly peer review process. Typically includes:

► Open identities: Authors and reviewers are aware of each other's identity.

► Open reports: Reports by reviewers are published alongside the relevant article (rather than being kept confidential).

► Open participation: The wider community (and not just invited reviewers) are able to contribute to the review process.

https://en.wikipedia.org/wiki/Open_peer_review

https://www.fosteropenscience.eu/learning/open-peer-review/#/id/5a17e150c2af651d1e3b1bce

WHAT IS OPEN ACCESS?

International movement with focus on scientific journal/research articles. The "**Three Bs**":

▶ <u>Budapest Open Access Initiative (2002)</u>: free, immediate, online access; permission to download, distribute, pass as data to software

▶ <u>Bethesda Statement on Open Access Publishing (2003)</u>

▶ <u>Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003)</u>: copyright holder must in advance allow users to "copy, use, distribute, transmit and display the work publicly and to make and distribute derivative work." Must properly attribute authorship.

<u>https://www.budapestopenaccessinitiative.org/</u><u>https://sparcopen.org/open-access/</u>

- **"Green" OA**: self archiving. Can publish in any scholarly journal, but secure right to deposit a version in an OA repository (as part of the copyright transfer process)

- **"Gold" OA**: publish directly. Titles are maintained in <u>Directory of Open Access Journals (DOAJ)</u>

OA is a business model shift:

From USER/SUBSCRIBER paying to PUBLISHER bearing costs

AUTHORS usually pay article processing charge (APC)

WHAT ARE PERSISTENT IDENTIFIERS (PIDS)?

▶ Persistent identifiers (**PIDs**) are digital identifiers that are globally unique, persistent, machine resolvable, has an associated metadata schema, identifiers an entity, and is frequently used to disambiguate between entities.

▶ The identifier is a string of numbers, letters, and/or symbols assigned to the digital object.

Digital Object Identifiers (DOIs):
PIDs for research outputs
https://doi.org/10.1007/s10874-014-9287-8

Digital Object Identifiers (DOIs):
PIDs for awards, grants, contracts
https://doi.org/10.46936/10.25585/60000017

ORCID iDs:
PIDs for People https://orcid.org/0000-0002-8523-1478

ROR IDs:
PIDs for organizations
https://ror.org/02ttsq026

https://www.loc.gov/maps/?fa=subject%3Aeast+asia&all=true&st=slideshow

AN OVERVIEW OF SCIENTIFIC OPEN ACCESS TRENDS IN
THE EAST ASIAN REGION

STATE OF OPEN ACCESS IN EAST ASIA

NOT FULLY COVERED

Directory of OA Repositories (Open DOAR)		Directory of OA Journals (DOAJ)
Korea:	37	238
Japan	681	113
China (PRC)	65	328 (This search includes Taiwan)
Taiwan	60	58
Hong Kong	10	33
https://v2.sherpa.ac.uk/opendoar/		https://doaj.org/

EAST ASIAN RESEARCHER PRESENCE INTERNATIONALLY

▶ Improved government guidance and policy clarity; greater integration in international system of scientific scholarly communications, including indexing (e.g., Medline, Scopus)

▶ Benefits for individual and institutional visibility

▶ Publication shifts, including collaboration with international publishers (e.g., Elsevier, Springer),

▶ Education on benefits (and cautions) on OA publishing.

See: Chai Hong Rim. "Practical Advice for South Korean Medical Researchers Regarding Open-Access and Predatory Journals," in Cancer Research and Treatment. Vol. 53, no. 1 (Jan 2021).

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7812024/

▶ **Chinese Academy of Sciences (CAS) and National Natural Science Foundation of China (NSFC)** issued a statement in <u>2014</u>: all state funded work must be deposited in a repository and must be made open access within 12 months

  NSFC's Open Access Repository <u>https://ir.nsfc.gov.cn/</u>

CHINA

▶ **NSFC, National Science Library (NSL),** and **National Science and Technology Library (NSTL)** voiced support for the European-led initiative, Plan S: "to transform, as soon as possible, research papers from publicly funded projects into immediate open access after publication, and we [China] support a wide range of flexible and inclusive measures to achieve this goal".

<u>https://joint-research-centre.ec.europa.eu/jrc-news_en</u>

▶ **Reference: Quirin Schiermeir. China backs bold plan to tear down journal paywalls (2018)   <u>https://doi.org/10.1038/d41586-018-07659-5</u>**

► Understanding the highly regulated publication system: state-controlled through central, regional, or local governments; multiple layers of management; issues of independence and transparency in editorial process.

Reference: Jing Wang, Willen Halffman, Hub Zwart. "The Chinese scientific publication system: Specific features, specific challenges," in Learned Publishing Vol. 34, no. 2 (Apr 2021) https://doi.org/10.1002/leap.1326

► Improving QUALITY beyond QUANTITY; reaching beyond China to international scientific community.

UNIQUE ASPECTS; CHINA AIMS FOR WORLD CLASS RESEARCH

►**CAS, NSFC,** and several other entities signed the international "Open Access 2020 Initiative" in 2017. It essentially declares that China will actively contribute to the reform of the global scientific communication system.

https://blog.doaj.org/2017/11/24/large-scale-implementation-of-open-access-in-china/

►**CAS** actively collaborating with international organizations and publishers

Example: AAAS's Science Partner Journal (SPJ) program: Chinese partners maintain editorial oversight. https://spj.sciencemag.org/

KEY DEVELOPMENTS

► For all funded research across the 17 ministries: research output data must be submitted through the National Technical Information Service (NTIS) platform

► The "Open Data Portal" consolidates science and technology data sets generated from government supported research institutes and makes them publicly available

KOREA

1960s: Laying S&T foundation
1980s: Enter innovation
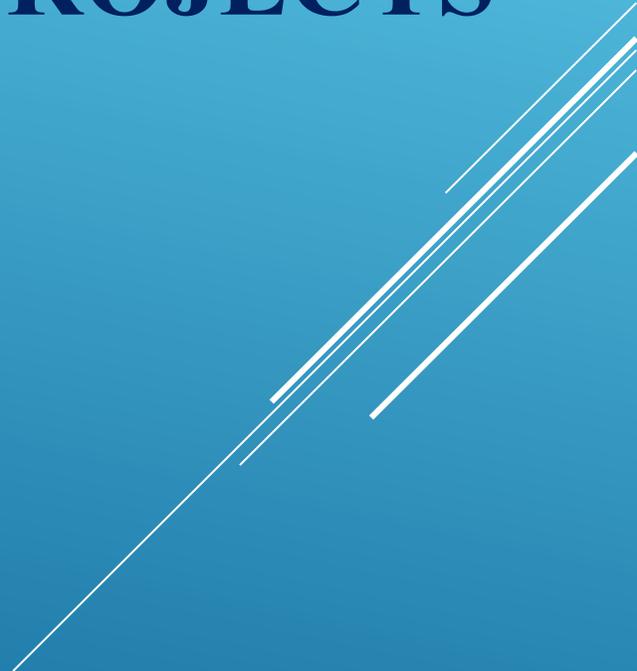**1990s**: Compete with the world
2000s: Lead the world

KISTI website, "History" https://www.kisti.re.kr/eng

See also: Youngim Jung, Open Access Developments in Korea (2020) https://k-erc.eu/wp-content/uploads/2020/12/KOR-KISTI.pdf

KOREA'S LEADING STM AGENCIES

▶ **Korea Institute of Science and Technology Information (KISTI):** goal is to build a national supercomputing ecosystem for science and technology innovation and to invigorate sharing and utilizing these knowledge resources

▶ **National Science and Technology Information Service (NTIS):** led by the Ministry of Science, ICT and Future Planning (MSIP) and operated by KISTI

▶ **National Digital Science Library (NDSL):** an information portal/integrated search service; goal is to improve productivity of national research and development initiatives; operated by KISTI

https://www.kisti.re.kr/eng/news/post/eng_brochure?t=1646414272818

KEY KOREAN DIGITAL PROJECTS

▶ **Open Access Korea:** consolidates 38 institutional repositories; provides free access to journals of S&T professional societies (shift from membership-based access) http://www.oak.go.kr/main/main.do

▶ **Korea Med Synapse:** digital archive and reference-linking platform that provides full text access to 135 medical journals (work by the Korean Association of Medical Journal Editors) https://synapse.koreamed.org/

▶ **Korea Open Access Repository:** a new project from 2020: Self-archiving; provides tools, such as collaborative co-authoring and lists of questionable journals and conferences. https://accesson.kisti.re.kr/main/main.do

JAPAN

Japan was early starter on Open Science project…

Council for Science and Technology Policy

under Cabinet Office: **S&T basic science law since 1995**

However, current challenges for Open Science…

- **JST**
- **NII**
- **JSPS**
- **AMED**

J-STAGE is an electronic journal platform for **Japanese academic journals**, administered by **the Japan Science and Technology Agency (JST).**

The site provides **free access to full text electronic journals, proceedings,** and **reports** from various **Japanese scientific societies.**

Over 3000 journals included.

90% open access.

J-STAGE (1998-)
STEPS TOWARDS OPEN SCIENCE

Japan Science Technology Information Aggregator, Electronic

https://www.jstage.jst.go.jp/static/pages/JstageOverview/-char/en

It includes the Journal@rchive!

MID- TO LONG-TERM STRATEGY

In March 2018, JST established the J-STAGE Advisory Committee, made up of outside experts on academic information distribution, university libraries, open science, and journal publishing. The committee considered <u>future directions</u> for J-STAGE and compiled its <u>basic stance and policy measures as a mid- to long-term strategy</u> for the <u>operation of J-STAGE</u> in March 2019. Based on this strategy, the implementation method and timeline will be fleshed out, and the necessary measures will be phased in.

Communication and negotiation with publishers through CHORUS!

https://dashboard.chorusaccess.org/

https://www.japan.go.jp/kizuna/category/science_technology.html

JAPANESE GOVERNMENT AGENCY ON INFORMATICS

▶ **National Institute for Informatics (NII).** https://www.nii.ac.jp/en/

▶ **Research Center for Open Science and Data Platform (RCOS)** https://rcos.nii.ac.jp/en/

https://www.japan.go.jp/kizuna/category/science_technology.html

KAKEN

Database for Researchers and Research in Japan funded by Japan Society for Promotion of Science (JSPS)
https://kaken.nii.ac.jp/index/

IRDB

This is a useful search engine to locate texts, data, etc, in the institutional repositories of Japanese universities and institutes. **https://irdb.nii.ac.jp/en**

DDBJ

Bioinformation and DDBJ Center provides sharing and analysis services for data from life science researches and advances science. https://www.ddbj.nig.ac.jp/index-e.html

LOCATING OPEN ACCESS RESOURCES

NON-CENTRALIZED ACTIONS

"Transformative Agreements"

Ex: Elsevier and the Japan Alliance of University Library Consortia for E-Resources (about 500 members).

"Read and Publish" Agreements

Ex: Chinese Academy of Sciences, the National Science Library, and Oxford University Press
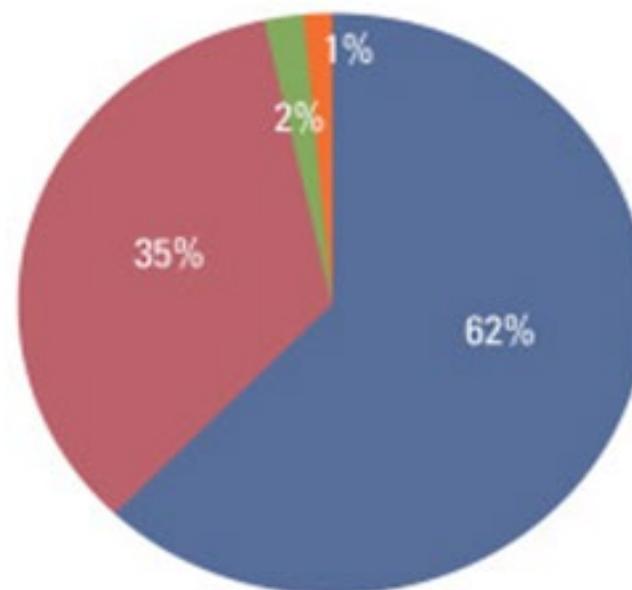
OPEN ACCESS AND OPEN SCIENCE INTO THE NEXT DECADES?

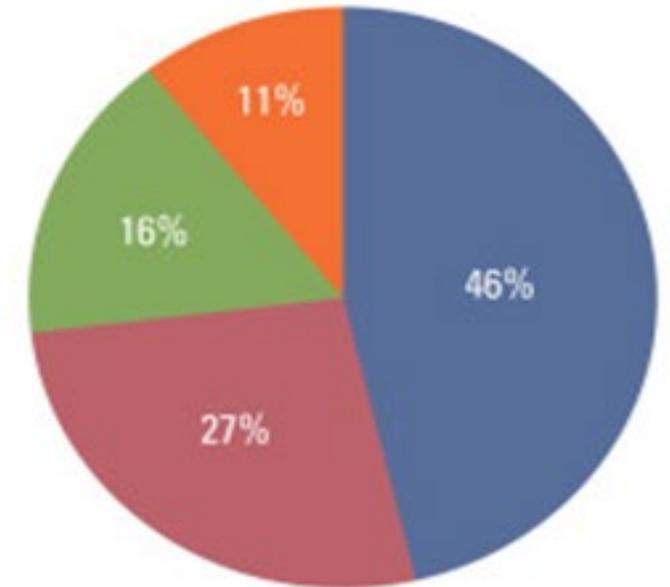
Are you interested in OA publishing?
- Highly interested
- Interested
- Not interested
- Negative
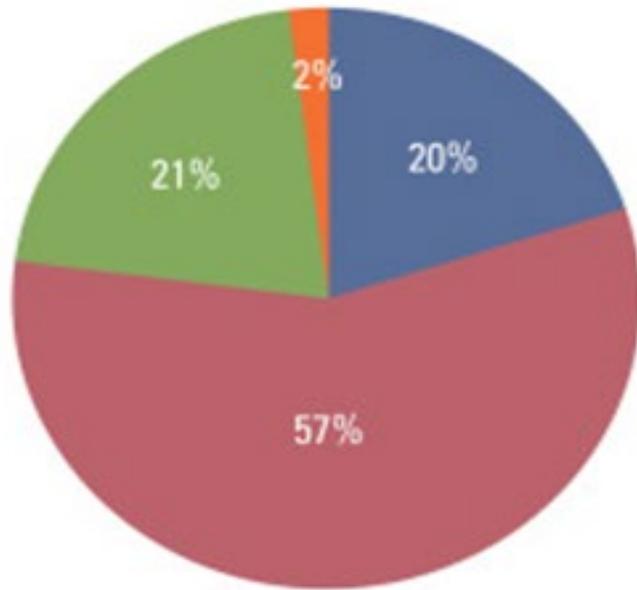
Why do you consider OA publishing?
- Can be cited and read more widely
- Researches supported by public funds should be open in public
- Recommendation from affiliation
- OA publishing is a public duty

What is the reason not considering OA?
- Economic burden for processing charge
- Relatively lower quality and reputation
- I don't know well about OA
- No publishable OA journals in my field

Reference: Kim, H. M. (2018). Survey on perception of Korean researchers regarding open access publishing. Proceedings of Korean Library and Information Science Society, 183-9. (Numerical data referenced from Kim's study of 1,275 interviewees; graphical figures drawn by Chai Hong Rim.) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7812024/

Bridgette Wessels, Rachel Finn, Thordis Sveinsdottir and Kush Wadhwa

Open Data and the Knowledge Society

https://www.loc.gov/collections/open-access-books/about-this-collection/

THANK YOU FOR YOUR ATTENTION!

Contact us for any questions!

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